Salton Sea Air Quality Monitoring and Focused Studies

December 6, 2007

Salton Sea Air Quality Technical Working Group Meeting

Introduction

- Welcome and brief recap of Day One
- Overview and group discussion of recommendations for baseline AQ monitoring network and focused studies
  - Semi-Permanent Monitoring – Network Design
    Presented by Earl Withycombe, ARB, et al
  - Focused Studies; Elements and Priorities for the 5-Year Plan
    Presented by Pamela Vanderbilt, CH2M HILL, et al

Semi-Permanent Monitoring

- Focus on variables that are consistent with current ARB/SCAQMD/ICAPCD monitoring networks
  - Baseline meteorological conditions (1-Hour Data)
  - Baseline concentrations of criteria pollutants (including H2S and NH3)
  - Limited baseline air toxic concentrations (i.e., speciation of samples collected at PM10/2.5 monitoring stations)
- Monitoring sites will be maintained on a continuous basis during pre-construction, construction, and project operation
- Data would be stored and maintained as part of an existing database

Focused Studies

- Focus on variables that are needed to evaluate potential impacts for future project-level studies
  - Estimation of PM10 and PM2.5 emission rates
  - Evaluation of particulate matter deposition
  - Meteorological conditions on sub-hour intervals (e.g., 5- or 20-minute intervals)
  - Preparation of data required for modeling of project level environmental impacts
  - Evaluation of potential control strategies
  - Data development to support studies of other media
- Sites would be evaluated during pre-construction, construction, and project operation, but not on a continuous basis
- Data storage would need to be coordinated with DFG database development

Baseline Salton Sea Air Quality Monitoring -Earl Withy combe, ARB

- Network Design

Estimation of PM10 and PM2.5 Emission Rates

- Research PM10 and PM2.5 emission rates for existing exposed playa to evaluate:
  - Seasonal variation in the percentage of "stable" and "unstable" crust formations
  - Landform variation
    - (e.g. paleo lake, playa-like, barnacle beach, dry wash, and interdune)
  - Seasonal crust strength
  - Particulate reservoirs for various landforms
  - Temperature variation
  - Effects of sand motion
- Research PM10 and PM2.5 emission rates for playa exposed and/or disturbed during construction

Evaluation of PM_{10} and $PM_{2.5}$ Emission Rates (continued)

- Refine seasonal threshold velocities for existing exposed and/or disturbed playa

Evaluation of Particulate Deposition

- Quantify the existing particulate matter deposition rates in surrounding areas (to evaluate baseline human, ecological, and agricultural exposures)
- Speciation of airborne and/or deposited particulate matter along the shoreline and in surrounding communities

Meteorological Conditions on a Sub-Hour Intervals (e.g., 5-or 2 0-minute Intervals)

- Develop a refined meteorological data set for use in the MacDougall dust emissions estimation method
- Collect sub-hour data necessary for support of emission rate studies (includes wind speed gusts)

Preparation of Data Required for Modeling of Project-Level Impacts

- MacDougall Method
- CALPUFF/AERMOD
- Other models??

Evaluation of Potential Dust Control Strategies (Current Tool Box of Options)

- water efficient vegetation,
- stabilization with brine (wet),
- stabilization with brine (salt crust),
- gravel cover,
- sand fences,
- tillage,
- chemical stabilization w/o water,
- chemical stabilization with water,
- water stabilization – conventional dust control, and
- moat and row
- others??

Data Development to Support Studies of Other Media

- Meteorological data to support water quality models
- Integrated approach to monitoring
- Development of a comprehensive Monitoring Assessment Plan with other technical disciplines